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ABSTRACT

Normal achievers were compared with underachievers on measures of anxiety, curiosity, motivation, conformity, self concept, and achievement. The 40 male underachieving children (age range 8 to 13 years) with learning disabilities received a 6-week remedial training program relevant to their deficits, in addition to a regular summer camp program, while the 40 normal achieving males (age range 8 to 13 years) were involved in a regular camp program. The achievers obtained higher scores than the underachievers on reading, spelling, and arithmetic, and older children did better than younger children within each sample, but there was no overlap in achievement between the two samples. It was found that the degree of underachievement increased markedly as the children got older, suggesting that remediation for underachievement needs to occur as early as possible. The underachievers conformed significantly less than the normals which was thought to be indicative of a lack of responsiveness to social reinforcement on the part of children with learning disabilities. Similarly, in some situations the underachievers reported less anxiety than the normals, perhaps indicating a greater social awareness and ability to verbalize anxiety on the part of the normals. (Author)

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Anxiety, Conformity, and Self-Perception
As Related to Learning Disabilities¹

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This project was concerned with a comparison of a group of "normal" achievers, and a group diagnosed as having "learning disabilities" (under-achievers). The children (males, ages 8-13), were compared on measures of anxiety, curiosity, motivation, conformity, the self-concept and achievement. The children with learning disabilities received a six week remedial training program relevant to their deficits (in addition to a regular camp program), whereas the normal children were involved in a regular camp program. Pre~~+~~ and post² measures were obtained on anxiety, curiosity, and the self-concept for children in both samples. In addition pre~~+~~ and post² measures on achievement were obtained for the learning disability sample. Pre² measures only were obtained for motivation and conformity. The original sample size was 40 males in each camp group matched for age (8-13). However for some of the variables there was an attrition of two to three subjects because of the subject's inability to complete the tests.

Initial Differences

It was hypothesized that there would be initial differences between the achievers and under-achievers on the following variables: (a) academic achievement (b) anxiety (c) curiosity (d) motivation (e) self-concept and (f) conformity. It was predicted that except for anxiety the direction of difference would be in favor of the achievers, i.e. they would score higher on each of the above variables excluding anxiousness. The rationale for

the predictions are based on the history and background of the subjects in the two samples. The under-achievers were academically two to four years behind their grade level, and their school placement in special learning or opportunity classes was a basic consideration for referral and acceptance to Camp UA (Under-Achievers). On the basis of their history of continuous failure, frustration, hyperactivity and concomitant behavior problems one would expect the under-achievers to be more anxious, less motivated, less curious, and have a poorer self-concept than the normal children attending Camp A (Achievers). Since one aspect of learning takes place via social reinforcement, one would expect the under-achievers to be less susceptible to social influence, and therefore to conform less than achievers.

Changes as a Function of the Training Environment

The under-achievers (Camp UA) received in addition to a regular camp program, a highly specialized six week training program which focused on their reported deficit areas. That is, they received training in reading, mathematics, gross and fine motor coordination, as well as speech and music therapy. All facets of the regular camp program were aimed at the further development of motor, perceptual, cognitive, and socialization skills. It was predicted on the basis of this enriched remedial program, that there would be significant improvement in achievement, curiosity and self-concept and a decrease in anxiety. Because of practical considerations there were no post-tests on the conformity and motivation variables. For control purposes the achievers (Camp A) received post-tests on anxiety, self-concept and curiosity. (It was not possible to obtain post-test measures on achievement variables for this group.) It was predicted that the under-achievers would make greater gains on self-concept and curiosity and show a greater reduction in anxiety than the achievers, because of the specialized training program received by the under-achievers.

Test Measures

1. Achievement The WRAT or Wide Range Achievement Test (Jastak and Bijou, 1946) which assesses grade level for reading, spelling and arithmetic was used as a general index of academic achievement. Raw and standard scores and grade levels were obtained for reading, spelling and arithmetic.
2. Curiosity The Specific Curiosity Scale (Day, 1968) was used to assess curiosity in a number of areas such as observation, thinking, stimulus seeking, etc. The questions on this scale include such items as "When I hear about something new, I want to learn more about it; I love to find out more about famous men; I love to ask questions; When I see a new kind of food in the supermarket I want to taste it right away."
3. Motivation The MPS or picture motivation scale (Kunca and Haywood, 1969) which measures the degree of intrinsic motivation was used to assess the motivation variable. The scale consists of 20 pairs of pictures. For each pair, one choice represents the intrinsic dimension of motivation, and the other choice the extrinsic dimension. A subject's score is the number of intrinsic themes that he selects.
4. Self-concept A modified version of the Semantic Differential (Osgood, Suci and Tannenbaum, 1957) was used to assess the subject's self-concept. In addition this test also had scales for assessing the concepts of ideal self, school, and reading.
5. Anxiousness A modified version of the S-R Inventory of Anxiousness (Endler, Hunt, and Rosenstein, 1962) was used to measure anxiety. This self-report inventory measured anxiety in the following six situations: you are about to start a race in front of all the campers; the nurse is about to give you a needle; while on a hike you get lost in the woods; you have to get up in front of the campers and read a story; you are

about to take a swimming test; someone in your family has been in an accident. Six modes of responding to anxiety were used for each situation: I have a stomach ache; I want to hide; I cry; I feel frightened; I want to run away; I feel like yelling.

6. Conformity Conformity was measured via a conformity apparatus (Endler, 1966). Subjects were tested in groups of five and responded to a total of 28 multiple choice stimulus items; both verbal and perceptual. The apparatus enables the experimenter to communicate simulated responses to the Ss. The number of times a subject agreed with the responses of the other Ss (actually simulated by the experimenter) on the 16 critical items (eight verbal, eight perceptual) was taken as an index of conforming behavior to social pressure. The subjects were tested in a mobile laboratory.

Results

A. Initial Differences

1. Achievement

The achievers obtained significantly higher scores than the under-achievers on reading, spelling and arithmetic as measured by the WRAT. There were also significant differences as a function of age, with the older children obtaining higher scores than the younger children in both groups. See Table 1 for means.

Insert Table 1 about here

The means are based on a two way analysis of variance (Sample by Age). An inspection of Table 1 reveals that there is no overlap in achievement between the two samples. That is, for all three variables the youngest age group (8-9 years old) for the Camp A Sample has a higher achievement score than the oldest age group (12-13) for the Camp UA Sample.

Note that the Camp A Sample is over-achieving in terms of grade level (e.g. 8-9 year olds have normally completed grades 2-3; 10-11 year olds, grades 4-5 and 12-13 year olds, grades 6-7). For the Camp UA Sample the degree of under-achievement accelerates with age. Though, the 8-9 year olds were not too far behind their expected level of achievement, the 12-13 year olds were two to three years behind their expected level of achievement. Note that both groups were at a higher achievement level for reading than they are for either spelling or arithmetic.

2. Curiosity

There were no differences between the two groups on the curiosity variable.

3. Motivation

The two groups did not differ on intrinsic motivation.

4. Self-concept

There were no differences between the two groups on self-concept, ideal self-concept, school concept, nor reading concept.

5. Anxiety

In general there were no differences between the two groups on anxiety. However for the situation "Someone in your family has been in an accident" the Camp A group reported significantly more anxiety than the Camp UA group. Furthermore, the Camp A Sample was higher on the "Feel more frightened" mode of response than the Camp UA Sample.

6. Conformity

The Camp A Sample conformed significantly more than the Camp UA Sample for verbal conformity, perceptual conformity and total conformity ($p < .01$). The means based on one way analyses of variance (sample differences) appear in Table 2.

Insert Table 2 about here

B. Changes as a Function of the Training Environment

1. Achievement

There were no pre-post differences on the achievement measures for Camp UA (Camp A did not receive a post-test on the achievement measures).

2. Curiosity

There were no pre-post differences on curiosity for either sample.

3. Motivation

Pre-measures only.

4. Self-concept

There were no pre-post differences on self-concept, ideal-self, school or reading for either sample.

5. Anxiousness

There were no pre-post differences on anxiety for either sample.

6. Conformity

Pre-measures only.

Discussion and Conclusions

The Camp A Sample (the achievers) achieved at a significantly higher level than the Camp UA Sample (under-achievers) as expected. Of particular interest however, is (a) the lack of overlap in achievement between the two samples and (b) the fact that the degree of under-achievement for the Camp UA Sample increases markedly as the children get older. The 8-9 year old under-achievers were not too far behind their expected grade level of achievement. However, 12-13 year olds were two to three years behind their expected level of achievement. This deterioration

underscores the accepted notion that remediation for under-achievement should occur as early as possible. There may well be a critical period for remediation.

Also of interest is the finding that the achievement grade level was higher for reading than for either spelling or arithmetic, since the greatest number of referrals is usually based on reading deficits. These results suggest that additional attention should be given to spelling and arithmetic problems.

The fact that there were no pre-post differences on achievement, should not necessarily be construed as a negative finding since (a) there were only $3\frac{1}{2}$ weeks difference between the pre- and post-tests on achievement (since the children could not be tested during the first few days and the last week of camp), and (b) one might normally expect regression in performance during the summer, the remedial program may well have offset this expected regression. Though the findings were not significant the minimal pre-post changes that did occur were in a positive direction. One might also expect that had the training period been of a longer duration more positive gains may have been achieved. It may take time for some initial consolidation to occur.

The Camp A Sample reported more anxiety than the Camp UA Sample in the situation "Someone in your family has been in an accident" and on the mode of response "I feel frightened". These results could possibly be interpreted as indicating a greater social awareness and ability to verbalize anxiety on the part of the Camp A Sample. In addition, one might speculate that the results with respect to the situational differences in anxiety may indicate that different familial relationships exist for the

two groups. The under-achievers probably encounter more conflict with their parents, due to concomitant behavior problems, and therefore may not have as warm an association and attachment to their family.

The Camp UA Sample conformed significantly less than the Camp A Sample. The relative absence of conformity for the Camp UA Sample may well be indicative of a lack of responsiveness to social reinforcement. This may be due to their past achievement history or lack of social reinforcement. Learning usually occurs in a social context.

Limitations

This study encountered the usual unavoidable problems that occur in applied research: e.g. (a) despite maximum cooperation of the camp staff there were many instances where camp programs and sickness necessitated the absence of subjects, (b) within the six week camp period, there were only approximately four weeks between pre- and post-measures, and (c) a number of Camp UA subjects were dropped from the sample due to their severe emotional problems.

The above limitations suggest this study be viewed as a pilot project giving important direction for future research.

Recommendations for future research

1. Though there are practical problems, it is recommended that, if possible, the pre^{test} be administered prior to camp and the post^{test} be administered shortly after camp. This would allow for a greater time period between pre^{test} and post^{tests}.
2. A follow-up evaluation should be conducted within three months after entering school to assess the facilitative effects of the camp program, and the possible consolidation of any learning that occurred.
3. Longitudinal studies,
4. A critical assessment of the test instruments should be conducted.

5. It would be advisable to evaluate the parental roles and expectations regarding their children as well as parent's assessment of gains made.
6. Future studies should include an additional control group of under-achievers who are not involved in a camp programme and who do not receive any special remediation during the summer.

One of the important practical implications of this study is the utilization of the activities in a summer camp programme for remedial purposes.

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Footnotes

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Table 1

A Comparison Between Camp UA (Under-Achievers) and
Camp A (Achievers) on Mean Grade Achievement
Measures as Assessed by the WRAT

Achievement Variable	Sample					
	Camp UA-Mean Score			Camp A-Mean Score		
	Age			Age		
	8-9	10-11	12-13	8-9	10-11	12-13
Reading Grade	2.9	3.6	4.9	6.7	9.0	9.9
Spelling Grade	2.5	3.0	3.7	6.2	8.1	8.1
Arithmetic Grade	2.6	3.3	3.8	4.7	6.0	7.3

Table 2

A Comparison Between Camp UA and Camp A
on Social Conformity

Conformity Variable	Sample	
	Camp UA Mean	Camp A Mean
Verbal Conformity	2.19	4.77
Perceptual Conformity	1.41	2.50
Total Conformity	3.59	7.27